

REMARKS

The Office Action of March 28, 2007 has been received and its contents carefully considered.

The present Amendment revises independent claim 1 to express more thoroughly the relationship $W_p > W_f$ according to Examples 1 and 2 that are described in the application. In particular, the Amendment revises claim 1 to limit the range of W_p to be not less than 33 % by weight and the range of W_f to be not more than 30 % by weight. This amendment is based on the Examples in the application. Specifically, in Examples 1 and 2, W_p are 40 % by weight and 33% by weight respectively and W_f are 30 % by weight and 25 % by weight respectively. Thus, Examples 1 and 2 clearly show the lower limit of W_p is 33 % by weight and the upper limit of W_f is 30 % by weight. It is respectfully submitted that the revisions to claim 1 overcome the rejections under the first and second paragraphs of 35 USC 112. The present Amendment also cancels dependent claims 7 and 8.

In the present invention, in order to improve the wear resistance of a resin pulley and also obtain a good moldability of the resin pulley, the inorganic powder and the reinforcing fiber are limited to proper ranges of amount while the relation between the inorganic powder and the reinforcing fiber is set to $W_p > W_f$. If too much inorganic powder is added in an attempt to improve the wear resistance, the amount of the reinforcing fiber and the resin becomes small and the moldability suffers.

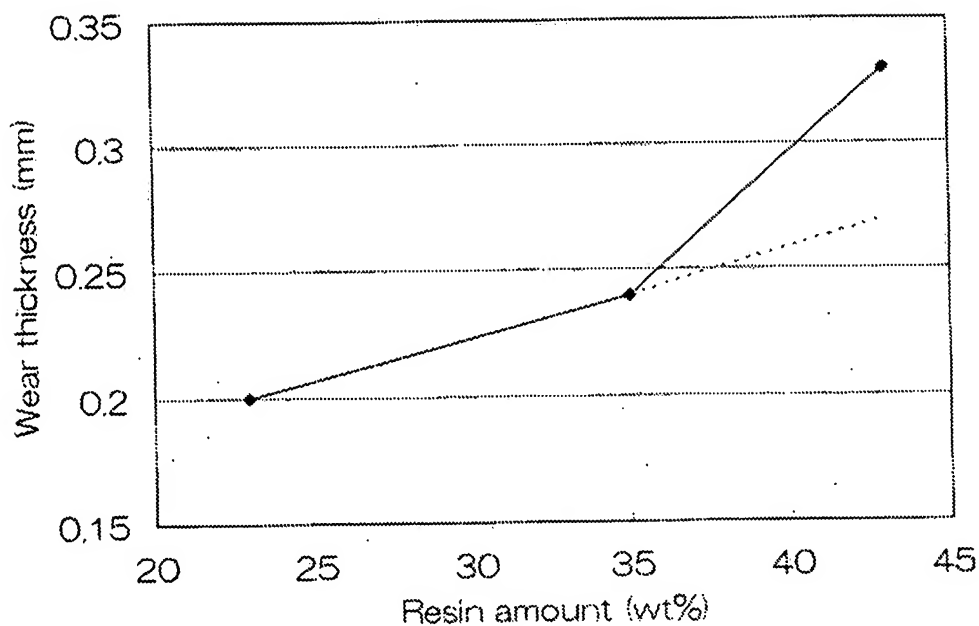
The Office Action rejects the claims for obviousness based on Asai, Isutsumi, and the Handbook of Fillers. The rejection is respectfully traversed for the reasons discussed below.

In known resin pulleys, good moldability and wear resistance are important. Accordingly, the following procedure is normal in this technical field: The reinforcing fiber is first added to improve the wear resistance, and at this time, the added amount of the inorganic powder is limited and made lower than that of the reinforcing fiber (that is, $W_p < W_f$) in order to prevent the moldability from deteriorating. Therefore, in all Examples of Asai, the relation $W_p < W_f$ is established as in Example 3.

The Office Action takes the position that Example 3 (having the relation $W_p < W_f$) has the same advantageous properties as Examples 1 and 2 (having the relation $W_p > W_f$), and that the difference in wear resistance is not based on the limitations of claim 1. Applicants respectfully disagree. The difference in wear resistance is based on a limitation of claim 1, that is, $W_p > W_f$.

The Examiner may think that the difference of the total amount of the inorganic powder and the reinforcing fiber causes the difference in wear resistance and that the ratio between W_p and W_f does not have an influence. Example 3 has indeed a smaller total amount of the inorganic powder and the reinforcing fiber and, as a result, a larger amount of the resin, compared with Examples 1 and 2. However, Figure A (below), which plots the relation between the amount of resin and wear thickness, clearly shows that the amount of resin and wear thickness are not simply proportional, and that the resulting wear thickness of Example 3 is completely different from those of Examples 1 and 2.

Fig. A



If the resin amount and wear thickness were simply proportional, the wear thickness of Example 3 must be much smaller as shown in Figure A by a broken line. However, the amount of the wear thickness of Example 3 is in reality significantly larger than what can be expected from the broken line. This difference is based on the fact that Example 3 has the relation $W_p < W_f$, while Examples 1 and 2 have the relation $W_p > W_f$.

As a result, Examples 1 and 2 can reduce the wear thickness by around as much as 39 % and around as much as 27 % respectively, compared with Example 3. In a resin pulley as an automobile component which is assembled in an automobile and used over a long period of time, this difference means a significant improvement of the wear resistance. This is an unexpected effect which cannot be obtained only by increasing the total amount of the inorganic powder and the reinforcing fiber and relatively reducing the amount of resin. That is, this is an unexpected effect which cannot be arrived at from Asai or the other references. Since claim 1 recites that $W_p > W_f$ and since this

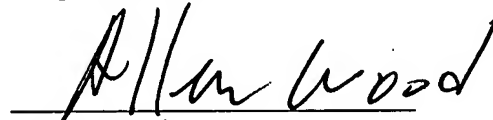
relationship cannot be gleaned from Awei and the remaining reference, the rejection of claim 1 should be withdrawn.

The remaining claims depend from claim 1 and recite additional limitations to further define the invention, so they are automatically patentable along with claim 1. Nevertheless, claims 9 will now be briefly addressed.

With respect to claim 9, the Office Action appears to take the position that since Examples 1 and 2 have generally the same properties, an unexpected effect also cannot be found from the results of them. However, Example 1 can reduce the wear thickness of the resin pulley by around as much as 17 %, compared with Example 2. This difference still means a significant improvement in the wear resistance of a resin pulley for an automobile component, as described above. In the invention defined in claim 9, the unexpected effect of further restricting wear of the resin pulley can be obtained by establishing the relation $W_p > W_r$ as in Example 1, in addition to establishing the relation $W_p > W_f$, as described above.

For the foregoing reasons, it is respectfully submitted that this application is in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,



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